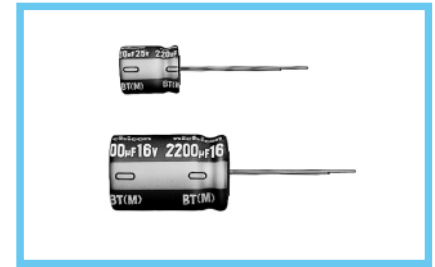
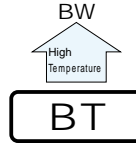


**BT** series High Temperature Range, For +125°C Use



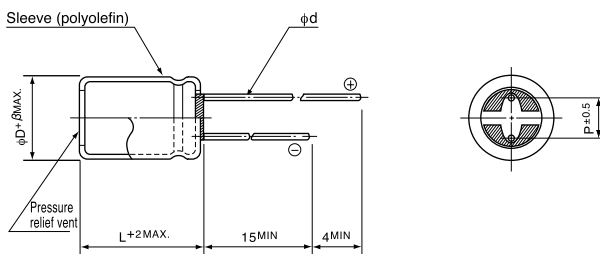
- Highly dependable reliability withstanding load life of 2000 to 10000 hours at +125°C.
- Suited for automobile electronics where heavy duty services are indispensable.
- Adapted to the RoHS directive (2002/95/EC).



## Specifications

Item	Performance Characteristics	
Category Temperature Range	-40 ~ +125°C (10 ~ 250V), -25 ~ +125°C (350 ~ 450V)	
Rated Voltage Range	10 ~ 450V	
Rated Capacitance Range	1 ~ 4700µF	
Capacitance Tolerance	±20% at 120Hz, 20°C	
Leakage Current	Rated Voltage (V)	10 ~ 100      160 ~ 450
	Leakage current	After 1 minute's application of rated voltage, leakage current is not more than 0.03CV or 4 (µA), whichever is greater. CV ≤ 1000: I = 0.1CV+40 (µA) max. (1 minute's) CV > 1000: I = 0.04CV+100 (µA) max. (1 minute's)
tan δ	Rated voltage (V)	10   16   25   35   50   63   80   100   160 ~ 250   350 ~ 450
	tan δ (MAX.)	0.20   0.16   0.14   0.12   0.10   0.10   0.08   0.08   0.20   0.24
For capacitance of more than 1000µF, add 0.02 for every increase of 1000µF.		
Stability at Low Temperature	Rated voltage (V)	10   16   25   35   50   63   80   100   160 ~ 250   350 ~ 450
	Impedance ratio	Z-25°C / Z+20°C   3   2   2   2   2   2   2   2   3   6
ZT / Z20 (MAX.)   Z-40°C / Z+20°C   4   4   4   4   4   4   4   4   6   -		
Endurance	After an application of D.C. bias voltage plus the rated ripple current for less than 50V (φD = 8 : 2000 hours, φD = 10 : 5000 hours, φD ≥ 12.5 : 10000 hours), 63~100V (φD = 8 : 2000 hours, φD = 10 : 3000 hours, φD ≥ 12.5 : 5000 hours), more than 160V (2000 hours) at 125°C the peak voltage shall not exceed the rated D.C. voltage, capacitors meet the characteristics requirements listed at right.	
	Capacitance change	Within ±30% of initial value (10 ~ 100V) Within ±20% of initial value (160 ~ 450V)
	Dissipation Factor	300% or less of initial specified value (10 ~ 100V) 200% or less of initial specified value (160 ~ 450V)
	Leakage current	Initial specified value or less
Shelf Life	After storing the capacitors under no load at 125°C for 1000 hours, and after performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they will meet the specified value for endurance characteristics listed above.	
Marking	Printed with white color letter on blue sleeve.	

## Radial Lead Type

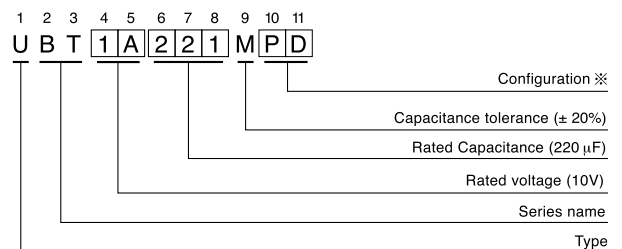


	(mm)				
φD	8	10	12.5	16	18
β	0.8	0.8	1.0	1.0	1.0
P	3.5	5.0	5.0	7.5	7.5
φd	0.6	0.6	0.6 <sup>○</sup>	0.8	0.8

※ In case L > 25 for the φ12.5 dia. unit, lead dia. φd = 0.8mm.

- Please refer to page 21 about the end seal configuration.

## Type numbering system (Example : 10V 220µF)



※ Configuration

φ D	Pb-free leadwire Pb-free Polyolefin sleeve
8 · 10	PD
12.5 ~ 18	HD

Please refer to page 21, 22, 23 about the formed or taped product spec.  
 Please refer to page 3 for the minimum order quantity.

- Dimension table in next page.

### ■ Dimensions

Cap. (μF)	V(Code)	Item Code	10 (1A)			16 (1C)			25 (1E)			35 (1V)			50 (1H)		
			Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)
1	010																
2.2	2R2														8 × 11.5	2.00	35
3.3	3R3														8 × 11.5	1.80	50
4.7	4R7														8 × 11.5	1.50	60
10	100														8 × 11.5	1.15	85
22	220														8 × 11.5	0.75	180
33	330														8 × 11.5	0.50	250
47	470														8 × 11.5	0.45	300
100	101														8 × 11.5	0.35	440
220	221	8 × 11.5	0.26	340	10 × 12.5	0.32	340	8 × 11.5	0.13	500	10 × 12.5	0.15	620	10 × 12.5	0.18	555	
330	331	10 × 12.5	0.15	620	10 × 12.5	0.15	620	10 × 12.5	0.10	680	10 × 16	0.094	790	10 × 20	0.098	930	
470	471	10 × 12.5	0.10	680	10 × 12.5	0.10	680	10 × 16	0.075	945	10 × 20	0.075	950	12.5 × 20	0.070	1330	
1000	102	10 × 20	0.057	1100	10 × 16	0.075	945	10 × 20	0.057	1100	12.5 × 20	0.058	1330	12.5 × 25	0.055	1650	
2200	222	12.5 × 25	0.033	1750	12.5 × 20	0.042	1490	12.5 × 25	0.033	1750	16 × 25	0.031	2010	16 × 31.5	0.031	2430	
3300	332	16 × 25	0.024	2300	16 × 25	0.024	2300	16 × 31.5	0.020	2710	18 × 35.5	0.025	2790				
4700	472	16 × 25	0.024	2300	16 × 31.5	0.020	2710	18 × 31.5	0.017	3310							
4700	472	16 × 31.5	0.020	2710	18 × 31.5	0.018	3270										

Cap. (μF)	V(Code)	Item Code	63 (1J)			80 (1K)			100 (2A)		
			Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)	Case size φD × L (mm)	Impedance (Ω) MAX.	Rated ripple (mArms)
4.7	4R7										
10	100										
22	220	8 × 11.5	2.00	130	8 × 11.5	1.50	150	8 × 11.5	2.00	130	
33	330	8 × 11.5	1.50	150	8 × 11.5	1.50	150	10 × 12.5	0.80	480	
47	470	8 × 11.5	1.50	150	10 × 12.5	0.80	480	10 × 12.5	0.80	480	
47	470	10 × 12.5	0.59	530	10 × 12.5	0.80	480	10 × 16	0.55	630	
100	101	10 × 16	0.41	690	10 × 12.5	0.80	480	10 × 16	0.55	630	
100	101	10 × 16	0.41	690	10 × 20	0.39	790	12.5 × 20	0.25	990	
220	221	12.5 × 20	0.16	1050	10 × 20	0.39	790	12.5 × 20	0.25	990	
220	221	12.5 × 20	0.16	1050	12.5 × 25	0.18	1240	16 × 25	0.11	1500	
330	331	12.5 × 25	0.12	1290	12.5 × 25	0.18	1240	16 × 25	0.11	1500	
330	331	12.5 × 25	0.12	1290	12.5 × 31.5	0.16	1390	16 × 31.5	0.079	1790	
470	471	12.5 × 31.5	0.097	1460	16 × 25	0.11	1500				

Rated Ripple (mArms) at 125°C 100kHz  
Impedance (Ω) MAX. at 20°C 100kHz

### ● Frequency coefficient of rated ripple current

V	CV	Frequency			
		120Hz	300Hz	1kHz	10kHz ~
10 ~ 100	1000 > CV	0.50	0.64	0.83	1.00
	1000 ≤ CV	0.67	0.79	0.91	1.00

Cap. (μF)	V(Code)	Item Code	160 (2C)		200 (2D)		250 (2E)		350 (2V)		400 (2G)		450 (2W)	
			Case size φD × L (mm)	Rated ripple (mArms)	Case size φD × L (mm)	Rated ripple (mArms)	Case size φD × L (mm)	Rated ripple (mArms)	Case size φD × L (mm)	Rated ripple (mArms)	Case size φD × L (mm)	Rated ripple (mArms)	Case size φD × L (mm)	Rated ripple (mArms)
4.7	4R7													
10	100													
22	220	10 × 20	115	10 × 20	78	10 × 20	78	10 × 20	53	10 × 20	53	10 × 25	58	
33	330	10 × 25	154	10 × 25	126	12.5 × 20	128	12.5 × 20	85	10 × 25	86	12.5 × 20	86	
33	330	10 × 25	154	12.5 × 20	157	12.5 × 25	171	12.5 × 25	139	12.5 × 31.5	142	16 × 25	154	
47	470	12.5 × 20	187	12.5 × 25	204	16 × 25	225	16 × 25	189	16 × 25	189	16 × 31.5	203	
47	470	12.5 × 20	187	12.5 × 25	204	16 × 25	225	16 × 31.5	243	16 × 31.5	243			
68	680	12.5 × 25	245	16 × 20	250	16 × 31.5	292							
100	101	16 × 25	329	16 × 25	329									
150	151	16 × 31.5	434											

Rated Ripple (mArms) at 125°C 120Hz

### ● Frequency coefficient of rated ripple current

V	Cap. (μF)	Frequency					
		50Hz	120Hz	300Hz	1kHz	10kHz	100kHz
160 ~ 450	4.7 ~ 33	0.75	1.00	1.25	1.50	1.75	1.80
	47 ~ 150	0.80	1.00	1.15	1.30	1.40	1.50